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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/722,760	11/27/2000	Eduard Michel	1999DE132	4985

25255 7590 11/22/2002

CLARIANT CORPORATION  
INTELLECTUAL PROPERTY DEPARTMENT  
4000 MONROE ROAD  
CHARLOTTE, NC 28205

EXAMINER

NOTE, JANIS L

ART UNIT	PAPER NUMBER
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1756

DATE MAILED: 11/22/2002

9

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/722,760

Applicant(s)

MICHAEL et al

Examiner

J. DOTE

Group Art Unit

1756

— The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- ☒ Responsive to communication(s) filed on 9/11/02
- ☐ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- ☒ Claim(s) 1 - 21 is/are pending in the application.
- Of the above claim(s) 12, 13 is/are withdrawn from consideration.
- ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- ☒ Claim(s) 1 - 11, 14 - 21 is/are rejected.
- ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- ☐ Claim(s) \_\_\_\_\_ are subject to restriction or election requirement

## Application Papers

- ☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner
- ☒ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119 (a)-(d)

- ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119 (a)-(d).
- ☒ All ☐ Some\* ☐ None of the:
- ☒ Certified copies of the priority documents have been received.
- ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_
- ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a))

\*Certified copies not received: \_\_\_\_\_

## Attachment(s)

- ☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). \_\_\_\_\_ ☐ Interview Summary, PTO-413
- ☒ Notice of Reference(s) Cited, PTO-892 ☐ Notice of Informal Patent Application, PTO-152
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948 ☐ Other \_\_\_\_\_

Office Action Summary

1. The examiner acknowledges the amendments to claims 1-3, 5, 7, 10, 14, and 15, and the addition of claims 16-21 filed in Paper No. 8 on Sep. 11, 2002.

It is noted that the marked-up copy of amended claim 1 merely replaced the cation " $\text{NH}_4^+$ " with --  $\text{H}_4^+$  -- without properly indicating that the cation " $\text{NH}_4^+$ " was to be deleted and the term --  $\text{H}_4^+$  -- was to be added. Previously filed claim 1 did not recite the term " $\text{H}_4^+$ ." See the marked-up copy filed in Paper No. 8. 37 CFR 1.121(c)(1)(ii) states that "[t]he changes may be shown by brackets (for deleted matter) or underlining (for added matter), or by any equivalent marking system." Since the clean copy of amended claim 1 also reflects said omission and addition, the clean copy of amended claim 1 has been entered.

2. It is noted that claim 1 has been amended to exclude "salt-like" structured silicates comprising cations of alkali metals. Claims 14 and 15 have also been amended to exclude salts of ionic structured silicates comprising cations of alkali metals. Newly added claim 21 also excludes said salts. In Paper No. 8, page 15, applicants state that the amendments to claims 1, 14, and 15 remove the compounds disclosed by Higashida. Higashida discloses the use of mica, which can be muscovite, phlogopite, lepidolite, etc. Col. 2, lines 45-50. The muscovite, phlogopite, and lepidolite disclosed in Higashida all comprise

the alkali metal potassium. Accordingly, the examiner concludes that instant claims 1, 14, 15, and 21 exclude "salt-like" structured silicates or salts of ionic structured silicates comprising any amount of alkali metal. In other words, no alkali metal cations can be present in the "salt-like structured" silicates or salts of ionic structural silicates recited as being part of applicants' invention.

3. Applicants' election of species without traverse in Paper No. 6 has been noted. The examiner has previously acknowledged the elected species, an electrophotographic toner or developer, and the elected ultimate species of invention, distearyldimethyl ammonium bentonite in preparation example 1 on pages 30-31 of the instant specification. Applicants indicated that originally filed claims 1-6, 9, 10, 14, and 15 read on the ultimate elected species.

However, pursuant to the amendments to claims 1, 14, and 15, and the addition of claims 16-21, filed in Paper No. 8, and for the reasons set forth in paragraph 2, supra, only instant claims 18 and 19 read on the ultimate elected species. Applicants' elected salt, distearyldimethyl ammonium bentonite, appears to be outside the scope of instant claims 1, 14, 15, and 21, because bentonite is identified as sodium montmorillonite. See Grant & Hachk's Chemical Dictionary, fifth

ed., page 71. The instant specification at page 8, line 2, identifies montmorillonite as  $\text{Na}_{0.33}\{(\text{Al}_{1.67}\text{Mg}_{0.33})(\text{OH})_2[\text{Si}_4\text{O}_{10}]\}$ . There is no evidence on the present record to show that the elected salt, quaternary ammonium bentonite, contains no sodium ions as required by the instant claims.

Claims 1-17, 20, and 21 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 6.

4. The objection to the specification set forth in the office action mailed May 1, 2002, Paper No. 7, paragraph 5, item (1), has been withdrawn in response to the replacement paragraph at page 13, line 6, of the specification, filed in Paper No. 8.

The objections to the specification set forth in Paper No. 7, paragraph 6, have been withdrawn in response to the replacement paragraphs at page 5, line 22, and page 14, line 5, of the specification, filed in Paper No. 8, and to the amendment to claim 1.

The rejections of claims 1-11 under 35 U.S.C. 112, second paragraph, set forth in Paper No. 7, paragraph 8, have been withdrawn in response to the amendments to claims 1, 5, 7, and 10.

The rejections of claims 1-6, 9, 10, and 14 under 35 U.S.C. 102(b) over US 5,807,628 (Elspass), as evidenced by US 5,385,776 (Maxfield), and of claim 15 under 35 U.S.C. 103(a) over Elspass, as evidenced by Maxfield, set forth in Paper No. 7, paragraphs 11 and 12, respectively, have been withdrawn in response to the amendments to claims 1, 14, and 15, deleting the Markush member "of a powder coating" in claim 1 and deleting the Markush members "powder or powder coating" in claims 14 and 15. Elspass does not teach nor suggest adding its BENTONE-34, a dialkylammonium montmorillonite, to a binder of an electrophotographic toner or developer or an electret, or to an electrostatic separation of a polymer process now recited in instant amended claim 1. Nor does Elspass teach or suggest an electrophotographic toner as recited in claims 14 and 15.

The rejection of claims 1-11, 14, and 15 under 35 U.S.C. 102(b) over US 4,404,270 (Higashida) set forth in Paper No. 7, paragraph 13, has been withdrawn in response to the amendments to claims 1, 14, and 15, deleting the cation Markush member alkali metal, and to claim 2, deleting the Markush members mica, phlogopite, biotite, and muscovite. Higashida does not teach or suggest a toner comprising a binder resin and a "salt-like" structured silicate as recited in instant claims 1, 14, and 15.

5. The elected ultimate species of invention, an electrophotographic toner or developer comprising a binder and the salt distearyldimethyl ammonium bentonite is allowable over the prior art of record. The prior art does not teach or suggest such a toner or developer comprising a binder and the salt distearyldimethyl ammonium bentonite.

6. The following rejections have been made pursuant to the examiner's selection of the next species for examination, as set forth in the rejections infra. Accordingly, claims 1-11 and 14-21 have been considered. Claims 12 and 13 remain withdrawn from consideration as being drawn to a nonelected species, there being no allowable generic or linking claim. Claims 12 and 13 do not read on the next elected species.

7. The disclosure is objected to because of the following informalities:

(1) The specification at page 13, lines 11 and 12, discloses chemical groups comprising the chemical moiety  $-\text{SO}_3^\alpha$ . It is not clear what is meant by the superscript " $\alpha$ ," which is not defined.

(2) The use of trademarks, e.g., Mogul L [sic: MOGUL L] at page 40, line 3, has been noted in this application. The trademarks should be capitalized wherever they appear and be

accompanied by the generic terminology. This example is not exhaustive. Applicants should review the entire specification for compliance.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

Appropriate correction is required.

Applicants' arguments filed in Paper No. 8 have been fully considered but they are not persuasive. Applicants state in Paper No. 8, page 12, lines 1-3, that they have amended specification to capitalize the trademarks. However, as noted in item (2), supra, applicants' amendment did not capitalize all the trademarks used in the specification.

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 1-11 and 16-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.



Claims 1 and 18 are indefinite in the phrase "salt-like structured silicates because it is not clear what is meant by the term "salt-like." It is not clear whether the structured silicates are salts or have some property of salts.

Claims 1 and 18 are also indefinite in the phrase "a method of imparting . . . the charge in an electrostatic separation of a polymer process comprising the step of adding a salt-like structured silicate . . . to an electrostatic separation of a polymer process" because the recited "addition step" is equivalent to a "use step," which does not positively recite a step needed to electrostatically separate a polymer process. Put another way, the phrase is indefinite because it is not clear how the process "uses" the salt-like structured silicate as claimed in claim 1. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

In addition the term "electrostatic separation of a polymer process" is indefinite because it is not clear what is being separated in a polymer process, e.g., the unreacted monomers, oligomers, initiators, etc.

Claim 1 is further indefinite in the cation " $H_4^+$ " because it is not clear how four hydrogen atoms are bonded to one another to form a cation.

Claim 18 is further indefinite in the phrase "adding a salt-like structured silicate . . . . to an electrostatic separation of a polymer process to form a mixture" because it is not clear how a mixture is formed when the salt is added to a process. A mixture usually requires at least two components.

Claim 2 is indefinite in the phrase "anion selected from the group consisting of montmorillonite . . . ." because according to the instant specification the compounds listed in the Markush group are not anions. The instant specification at page 7, line 1, to page 8, line 13, identifies the members as naturally occurring structured silicates. For example, the specification at page 7, line 20, identifies serpentine as  $Mg_3(OH)_4[Si_2O_5]$ . According to the instant specification at page 6, line 13, the group  $[Si_2O_5]^{2-}$  (not "serpentine") is the anion, and  $Mg^{2+}$  is the cation. The specification and this claim are inconsistent.

Claim 2 is further indefinite because the compounds montmorillonite, bentonite, hectorite, paragonite, beidellite, feldspar, zeolite, actinolite, crocidolite, nontronite, saponite, faujasite, permutite, and sasil are outside the scope of instant claim 1 because they comprise alkali metal cations, such as Na, Li, and K. See the instant specification, page 7, lines 17-19, and page 8, line 2-12, for the chemical identification of the compounds listed supra. For example, the specification identifies at page 8, line 2, identifies montmorillonite as

$\text{Na}_{0.33}\{(\text{Al}_{1.67}\text{Mg}_{0.33})(\text{OH})_2[\text{Si}_4\text{O}_{10}]\}$ . As discussed in paragraph 3, supra, bentonite is identified as sodium montmorillonite. Permutite is identified as  $\text{Na}_2\text{Al}_2\text{H}_6\text{Si}_2\text{O}_8$ . See Grant & Hackh's Chemical Dictionary, fifth ed., page 434.

Claim 3 is indefinite because the cations  $\text{Na}^+$ ,  $\text{Rb}^+$ , and  $\text{Cs}^+$  are outside the scope of instant claim 1. The cations are alkali metals. See Grant & Hackh's Chemical Dictionary, fifth ed., pp. 22-23.

Claim 5 is indefinite in the three chemical groups at lines 52 and 53, comprising the moiety  $-\text{SO}_3^\alpha$  because the superscript " $\alpha$ " is not defined.

Claim 21 is indefinite in the phrase "selected from the group consisting of an electrophotographic developer, an electret material or an electrostatically separated polymer" (emphasis added) for improper Markush language. Proper Markush language would be "R is selected from the group consisting of . . . and . . ." or "R is . . . or . . ." MPEP 2173.05(h) (8th ed., Aug. 2001). Applicants are using a combination of both phrases. Thus, it is not clear what is the scope of the instant claim.

13. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

14. Claims 1-11 and 16-18 are rejected under 35 U.S.C. 101 because the claimed recitation of a "use," without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 679 (Bd. App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

10. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

11. Claims 1-11, 16-19, and 21 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

(1) Instant claim 1 recites the cation "H<sub>4</sub><sup>+</sup>". The originally filed specification does not provide an adequate written description of said cation. The originally filed

specification does not disclose the use of the cation " $H_4^{+}$ ". See the specification, page 6, line 1-3, and page 9, lines 11-15.

(2) Instant claims 1 and 18 recite an electrostatic separation of a polymer process. The originally filed specification does not provide an adequate written description of an electrostatic separation of a polymer process. The originally filed specification describes a process for electrostatically separating polymers from one another, wherein a charge control agent is added to the polymers to be separated. See the specification, page 4, lines 4-18. The recitation "an electrostatic separation of a polymer process" encompasses undisclosed electrostatic separations of polymer processes, such as the separation of unreacted components in a process for making polymers.

(3) Instant claim 19 recites an electrophotographic toner or developer comprising distearyldimethyl ammonium and bentonite. The originally filed specification does not provide an adequate written description of the recitation "distearyldimethyl ammonium and bentonite." The originally filed specification at pages 30-31 discloses the "salt-like" structured silicate "distearyldimethyl ammonium bentonite." In other words, the specification discloses the salt compound, distearyldimethyl ammonium bentonite. The recitation "comprising distearyldimethyl ammonium and bentonite" in instant claim 1 encompasses, in

addition to the salt distearyldimethylammonium bentonite, but also a composition comprising the compound bentonite and the compound distearyldimethyl ammonium.

(4) Instant claim 21 recites an electrophotographic developer, an electret material, and an electrostatically separated polymer comprising 30 to 99% by weight of a binder and 0.01 to 50% by weight of at least one salt of ionic structured silicates. The originally filed specification does not provide an adequate written description of said compositions. The originally filed specification at page 30, lines 5-6, discloses that an electrophotographic toner, a powder, or a powder coating comprises 30 to 99% by weight of a binder and 0.01 to 50% by weight of at least one salt of ionic structured silicates based on the weigh of toner. The recited "electrophotographic developer" includes, not only a toner, but also binder-carrier particles. The specification does not disclose that binder-carrier particles, electret materials, and electrostatically separated polymers can comprise a binder and at least one salt of ionic structured silicates in the amounts recited in the instant claim.

12. Claims 1, 5, 14, 15, and 21 are objected to because of the following informalities:

Claim 1 is missing a comma between the terms "developer" and "an electret material" in the phrase "or developer an electret material".

Claim 5 has an extraneous comma in the phrase "phenyl, naphthyl, or heteroaryl,".

Claims 14 and 21 are missing the conjugation "and" between the terms "binder" and "0.01" in the phrase "of a binder, 0.01 to 50% by weight, of at least one salt . . ."

Claim 15 is missing the conjugation "and" between the terms "binder" and "0.05" in the phrase "of a binder, 0.05 to 20% by weight, of at least one salt . . ."

Appropriate correction is required.

13. Claims 1-11, 16-18, and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by US 4,808,849 (Inculet).

Inculet discloses adding inherently charged phyllosilicates to a binder of an electret material to form an electret material. The binder includes materials to make paper products or ceramic tiles. Col. 2, lines 33-35, and reference claim 6. Inculet discloses that the phyllosilicates are preferably vermiculite, kaolinite, or serpentine minerals. Col. 2, lines 24-27, and reference claim 3. Said phyllosilicates meet the "salt-like structured silicate" limitation recited in instant claims 1-11, 16-18, and 21. Inculet measures the surface potential of the

resultant electret material. Col. 3, lines 61-66. Thus, Inculet discloses electrostatically charging the electret material as recited in instant claim 18.

14. Claim 18 is rejected under 35 U.S.C. 102(b) as being anticipated by US 4,404,270 (Higashida).

Higashida discloses adding mica as a charge control agent to the binder resin of a toner to form a toner. Higashida discloses a toner comprising 96 wt% of a binder resin, 1 wt% of a colorant, and 3 wt% of mica, as a charge control agent. Higashida discloses that the mica can be muscovite, phlogopite, lepidolite, etc. Col. 2, lines 45-50. Muscovite, phlogopite, and lepidolite disclosed at col. 2 of Higashida meet the "salt-like structured silicate" limitation recited in instant claim 18.

Higashida further discloses that the toner is mixed with a carrier comprising spherical iron oxide particles to form a two-component developer. The developer has a toner charge to mass ratio of +19.0  $\mu\text{C}/\text{g}$  toner, which was measured by a blow-off method. See example 1 at cols. 3 and 4. Thus, Higashida discloses electrostatically charging the toner as recited in instant claim 18.

15. Claims 1-11, 14-18, 20, and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Japanese Patent 55-166652



(JP'652), as evidenced by the Japanese Patent Office (JPO) English-abstract of JP'652, American Chemical Society (ACS) file registry no. 1332-58-7, and Grant & Hackh's Chemical Dictionary, fifth ed., page 321.

JP'652 discloses adding a commercially available kaolin ASP-170 as a charge control agent to the binder resin of a toner to form a toner, and electrostatically charges the toner. See the JPO abstract and JP'652, page 398, example 3. JP'652 discloses a toner comprising 91 wt% of a binder resin, 4.5 wt% of a colorant, and 4.5 wt% of kaolin ASP-170 as a charge control agent. See JP'652, example 3, and the JPO abstract. The weight percentages are within the ranges recited in instant claims 14, 15, 20, and 21. Kaolin ASP-170 is identified as a clay that is essentially kaolinite, a hydrated aluminum silicate. See the ACS RN 1332-58-7. Both kaolin and kaolinite have the chemical formula  $\text{Al}_2\text{O}_3 \cdot 2\text{SiO}_2 \cdot 2\text{H}_2\text{O}$ . See Grant & Hackh's Chemical Dictionary, fifth ed., page 321. JP'652's kaolin ASP-170 meets the "salt-like" structured silicate limitation recited in instant claims 1 and 18 and the salt of an ionic structured silicate recited in instant claims 14, 15, and 21.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janis L. Dote whose telephone number is (703) 308-3625. The examiner can normally be reached Monday through Friday.

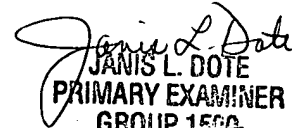
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Mark Huff, can be reached on (703) 308-2464. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9311 (Rightfax) for after final faxes, and (703) 872-9310 for other official faxes.

Any inquiry of papers not received regarding this communication or earlier communications, or of a general nature or relating to the status of this application or proceeding should be directed should be directed to the Customer Service Center of Technology Center 1700 whose telephone number is (703) 306-5665.

JLD  
November 17, 2002

  
JANIS L. DOTE  
PRIMARY EXAMINER  
GROUP 1500  
1700